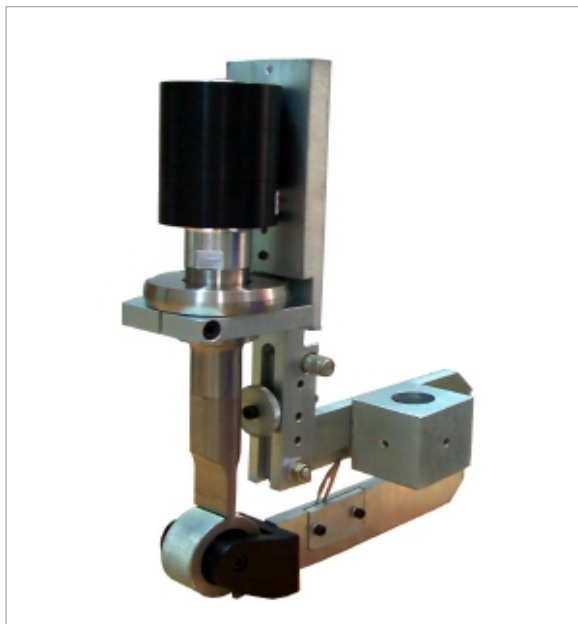


# Ultrasonic Textile Cutting And Sealing System

## ULTRASONIC CUTTING AND SEALING SYSTEM

Ultrasonic energy has found extensive use in textiles and their downstream processing. Many of these uses are based on the ability to use ultrasonic energy to induce heat and pressure by vibratory action.

The principal advantage of the ultrasonic seal and cut method is that the edge of the textile material, while being cut simultaneously, is sealed by the dissipation of ultrasonic energy, thereby preventing the presence of a frayed edge or the unraveling of threads, no discoloration of fabric and very strong, uniform, smooth, clean and long lasting edges without over thickness with low energy consumption. **Roop Telsonic Ultrasonix Limited** offers online ultrasonic cutting and sealing systems for cut and seal application in one operation for textile fabrics, woven sacks/plastics. Apart from standard model we also offer tailor made horns, sealing wheels, cutting wheels and fixtures as per customer's application and machine set up.



Ultrasonic Textile Cut & Seal System

Ultrasonic cutting and sealing system mainly comprises of :

### 1. Ultrasonic Generators

The latest development of Telsonic Generators in the Range of 500W to 4500W is based on sophisticated and most modern technology featuring:

- \* Amplitude regulated power system.
- \* Electronic booster by means of electronically selecting amplitude ranges of 100/90/80/70 %.
- \* Fully automatic tuning and frequency control under all load conditions.
- \* Built in circuit tuning protection for all possible fault and load conditions.
- \* Modular construction with built in process interface.
- \* Clearly arranged front panel with optical display of the operational conditions.

### 2. Converter and Booster

- \* Fully enclosed spring loaded converter with cooling system and connection hood for full turning capacity of 360°.
- \* Novel Booster mounting system for maximum rigidity.
- \* Five standard boosters with transformation ratio of: 0.5/1/1.5/2/2.5.
- \* The whole assembly designed as a "snap-in-unit".

Materials like polypropylene(pp), polyethylene (HDPE/LDPE), polyester, nylon, modified acrylics and synthetic blends with up to 40% non-synthetic fibre content are suitable for processing. In addition to this films and coated fabrics can be processed.

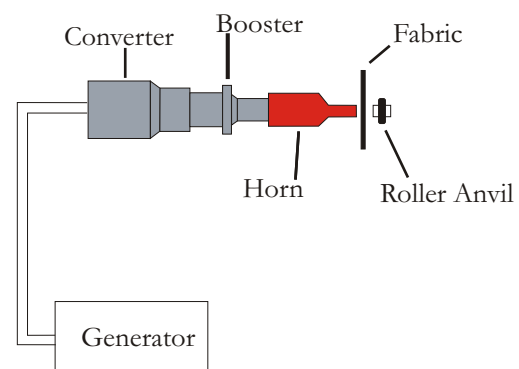
### UNIQUE FEATURES & ADVANTAGES

- \* Automatic Tuning of Horn & Horn life indication.
- \* Built in electronic amplitude setting– Allowing the user to choose amplitudes through generator between 70% to 100% without changing the Booster.
- \* No emission of cutting fumes in the cutting area so reduces the expensive suction system.

### Working of Ultrasonic cutting and sealing system

The Generator is the heart of ultrasonic system, its function being to supply the Converter with an alternating current of a given ultrasonic frequency. Converter converts electrical energy into mechanical energy in the form of ultrasonic vibrations, which are finally transmitted via Booster and Horn directly on to the part being cut / sealed. This external vibration energy causes fusion of thermoplastic fibres due to high temperature without any physical damage to the fabric.

### Ultrasonic Textile Cut & Seal System



### 3. Horn/Sonotrode

Fabric cutting or sealing needs specially engineered horn with cutting or sealing wheel. We design horns of perfect profiles, machined out of the right alloy for longer life and efficient transmission of ultrasonic power to the cutting or sealing edge. Developing of custom made horn is our speciality.

## Our Technology provides the following Advantages.

- \* Prevents fraying to take place.
- \* It eliminates the emission of toxic fumes.
- \* Eliminates the heating of machine.
- \* Reduced Production time.
- \* Reduction in Energy Consumption.
- \* Removal of Selvage.
- \* Cutting and Welding at the same time of synthetic fabrics.

## Typical Textile Applications

**Acrylic-** Filters, awnings, blankets, garments.

**Nylon-** Carpets, hook and loop material, seat belts.

**Polyester-** Conveyor belts, filters, garments, laminates, packaging.

**Polyethylene:** Laminates, resealable bags.

**Polypropylene:** Bags, carpet backing, snack food packaging, disposable garments.

**PVC:** Films, shrink packaging, tarpaulins.

**Urethane:** Rainwear, coated materials.



## Applications in particular

**On Loom** – The ultrasonic cutter can be integrated on circular looms for online continuous sealing or cutting and sealing of circular/tubular fabrics into flat fabric, with uniform, clean and stable selvedge. This is essential for Woven Sack Fabrics, Geo Textiles, Tarpaulin Fabrics, Ground Covering Fabrics (Agro Textiles).



### Packaging

Ultrasonic technology is applicable in fully automated lines for:

Flat pouches (welding step by step).

Horizontal flow pack (continuous welding).

Aluminum polythene (welding step by step).

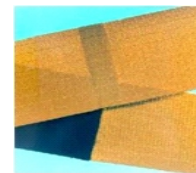
Moulded injection tubes.



**Industrial Textiles** – Within industrial fabrics arena where small width fabric is required with non-fraying and stable edge, Ultrasonic slitting is the optimal technique of fabric cutting. Ultrasonic slitting process prevents unraveling of woven or knitted material by sealing the slit edge.

Ultrasonic cutter can be fitted on plain loom or fabric winding and unwinding assembly.

**Other Industries** – Ultrasonic Cutting is also useful for cutting synthetic textile fabrics like Satin, Velcro, etc.



**And many more.**

**NOTE:** Technical specifications are subject to change without prior notice, due to continuous upgradation.

## CONTACTS

### Factory

Gandhinagar

Tel: 079-23287452 / 23287454 Fax: 2328 7455

### Branch Offices & Representatives

**New Delhi**

Tel: 011-2237 8502 / 2237 7196

**Chennai**

Tel: 044-2435 4384 / 24354385

**Hyderabad**

Tel: 09000887678

**Pune**

Tel: 09004023199

**Kolkata**

Tel: (033) 40068772 / 73

**Vadodara**

Tel: 09825007609

**Aurangabad**

Tel: 09423028028

**Bangalore**

Tel: 09845129401

### Exports

Tel: +919820321390

Email: export@rooptelsonic.com.

**Thailand**

Tel: +66(0) 27413835

**Malaysia**

Tel: +601121218636

**Vietnam**

Tel: +84-983969798

**ROOP TELSONIC ULTRASONIX LIMITED**



**Regd. Off :** A/41, Nandkishore Industrial Estate, Off Mahakali Caves Road, Andheri (E), Mumbai - 400 093.

**Corporate Office :** 803,C Wing, 32 Corporate Avenue, Off Mahakali Caves Road, Andheri (E), Mumbai - 400093.

Tel: 022-42111500 Fax : 42111505 E-mail: sales@rooptelsonic.com Web: www.rooptelsonic.com